CLAIMS:

1. A hydrogen-absorbing alloy for batteries in the form of powders comprising at least one rare earth element, nickel and at least one transition metal in which the surface portion of the alloy has nickel in metallic state exposed at the surface, pores positioned between the nickel and the nickel, and a nickel-rich layer present on the alloy surface contacting with the pores.

2. A method for producing a hydrogen-absorbing alloy for batteries which comprises a first step of grinding a hydrogen-absorbing alloy comprising at least one rare earth element, nickel and at least one transition metal to prepare alloy powders, a second step of treating the alloy powders in an alkaline aqueous solution, a third step of treating the alloy powders in an acidic aqueous solution, and a fourth step of a dehydrogenation treatment to remove hydrogen absorbed in the alloy powders in the presence of acetate ion in an aqueous solution.

3. A method according to claim 2, wherein the dehydrogenation treatment is carried out using oxygen as a dehydrogenating agent and comprises stirring the alloy powders in the aqueous solution with blowing air or oxygen into the aqueous solution.

4. A method according to claim 2, wherein the dehydrogenation treatment is carried out using a peroxide represented by the formula B_2O_2 (in which B denotes H, Li, Na or K) as a dehydrogenating agent and comprises stirring the alloy powders in the aqueous solution with adding the

peroxide to the aqueous solution.

5. A method according to claim 4, wherein the peroxide is aqueous hydrogen peroxide.

6. A method according to claim 5, wherein the aqueous hydrogen peroxide is added in an amount of 0.2-4.0% by weight in terms of hydrogen peroxide based on the alloy powder.

7. A method according to claim 5, wherein the temperature of the aqueous solution when the aqueous hydrogen peroxide is added is 30-80°C.

8. A method according to claim 2, wherein the dehydrogenation treatment is carried out using a peroxodisulfate represented by the formula $D_2S_2O_8$ (in which D denotes Li, Na or K) as a dehydrogenating agent and comprises stirring the alloy powders in an aqueous solution with adding the peroxodisulfate.

9. An alkaline storage battery which has a negative electrode comprising a hydrogen-absorbing alloy in the form of powders comprising at least one rare earth element, nickel and at least one transition metal in which the surface portion of the alloy has nickel in metallic state exposed at the surface, pores positioned between the nickel and the nickel, and a nickel-rich layer present on the alloy surface contacting with the pores; a positive electrode comprising a metal oxide; a separator; and an alkaline electrolyte.

10. A hydrogen-absorbing alloy for batteries in the form of powders comprising at least one rare earth element,

nickel and at least one transition metal in which the surface portion of the alloy has nickel in metallic state exposed at the surface, pores positioned between the nickel and the nickel, and a nickel-rich layer present on the alloy surface contacting with the pores, the surface of the nickel in metallic state and the surface of the nickel-rich layer being modified with OH^- group.

11. A method for producing a hydrogen-absorbing alloy for batteries which comprises a first step of grinding a hydrogen-absorbing alloy containing at least one rare earth element, nickel and at least one transition metal to prepare alloy powders, a second step of treating the alloy powders in an alkaline aqueous solution, a third step of treating the alloy powders in an acidic aqueous solution, a fourth step of a dehydrogenation treatment to remove hydrogen absorbed in the alloy powders in the presence of acetate ion in an aqueous solution, and a fifth step of adding an alkali to the aqueous solution.

12. A method according to claim 11, wherein pH of the aqueous solution is adjusted to 10 - 14 by the addition of the alkali in the fifth step.

13. A method according to claim 11, wherein pH of the aqueous solution is adjusted to 11 - 13 by the addition of the alkali in the fifth step.

14. A method for producing a hydrogen-absorbing alloy electrode for batteries which comprises preparing a paste by kneading a hydrogen-absorbing alloy with a thickening agent or a binder and water and coating the resulting paste

on a metallic substrate, said hydrogen-absorbing alloy being in the form of powders comprising at least one rare earth element, nickel and at least one transition metal in which the surface portion of the alloy has nickel in metallic state exposed at the surface, pores positioned between the nickel and the nickel, and a nickel-rich layer present on the alloy surface contacting with the pores, the surface of the nickel in metallic state and the surface of the nickel-rich layer being modified with OH^- group.

15. A method according to claim 14, wherein pH of the paste is adjusted to 10 - 14.

16. A method according to claim 14, wherein pH of the paste is adjusted to 11 - 13.

17. An alkaline storage battery which has a negative electrode comprising a hydrogen-absorbing alloy in the form of powders containing at least one rare earth element, nickel and at least one transition metal in which the surface portion of the alloy has nickel in metallic state exposed at the surface, pores positioned between the nickel and the nickel, and a nickel-rich layer present on the alloy surface contacting with the pores, the surface of the nickel in metallic state and the surface of the nickel-rich layer being modified with OH^- group; a positive electrode comprising a metal oxide; a separator; and an alkaline electrolyte.